Urinary Incontinence in Men

National Kidney and Urologic Diseases Information Clearinghouse

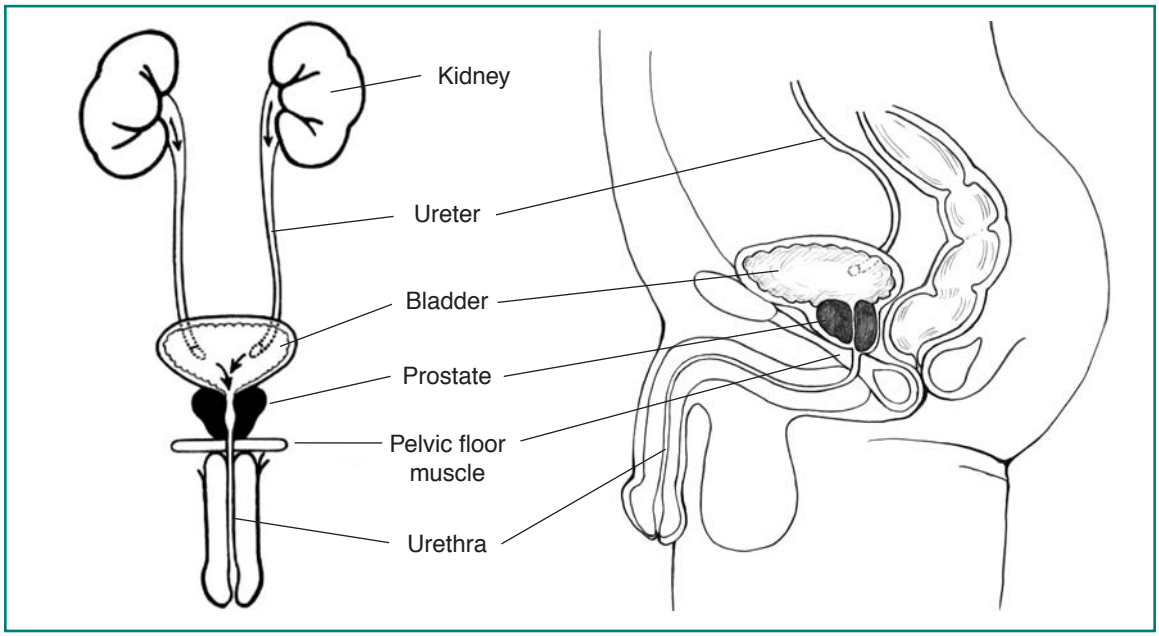
National Institute of Diabetes and Digestive and Kidney Diseases

NATIONAL INSTITUTES OF HEALTH

Urinary incontinence (UI) is the accidental leakage of urine. Over a lifespan, there are gender differences in the frequency of UI. In childhood, girls usually develop bladder control at an earlier age than boys, and bedwetting (nocturnal enuresis) is less common in girls than in boys. However, adult women are far more likely to experience UI because of the anatomy of their urinary tract and the stresses caused by pregnancy and childbirth. Nevertheless, men may experience UI as a result of prostate problems, and both men and women can experience nerve damage that leads to UI. Its prevalence increases with age, but it is not an inevitable part of aging.

UI is a medical problem. To find a treatment that addresses the root of the problem, you need to talk to your health care provider. The four forms of UI are

- temporary or reversible incontinence related to urinary tract infection, constipation, or delirium
- stress incontinence caused by weak pelvic and sphincter muscles
- urge incontinence caused by damaged or irritable nerves
- overflow incontinence that results when an individual is unable to empty the bladder

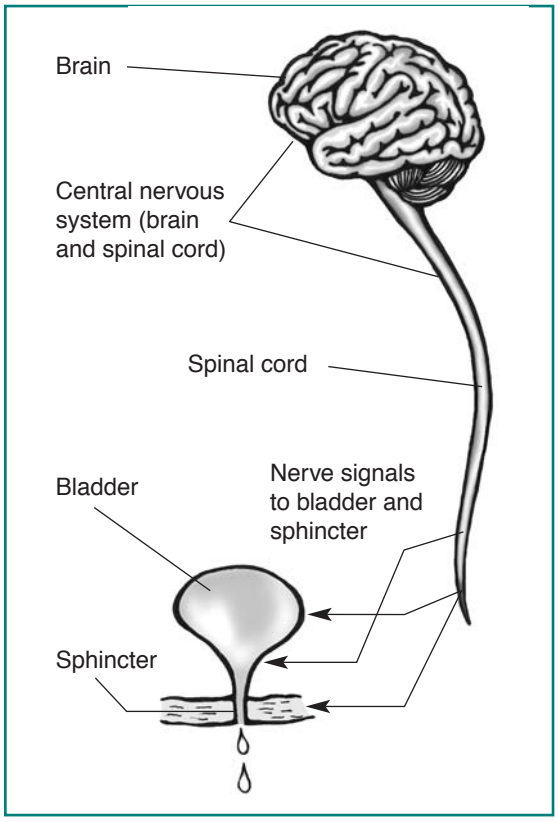


Male urinary tract, front and side views

U.S. Department of Health and Human Services

What causes UI in men?

For the urinary system to do its job, muscles and nerves must work together to hold urine in the bladder and then release it at the right time. Babies are not born with the ability to control urination. As children grow, they learn to interpret nerve signals and develop the muscle control required to stay dry. In children between the ages of 5 and 10, some incontinence may result from limited bladder capacity or delayed development of the nerve pathways that signal a full or emptying bladder. This form of incontinence fades away as the bladder grows and nerves become mature. Other types of nerve problems, however, can cause urination problems that are more difficult to overcome.



Nerves carry signals from the brain to the bladder and sphincter. Any disease, condition, or injury that damages nerves can lead to urination problems.

Nerve Problems

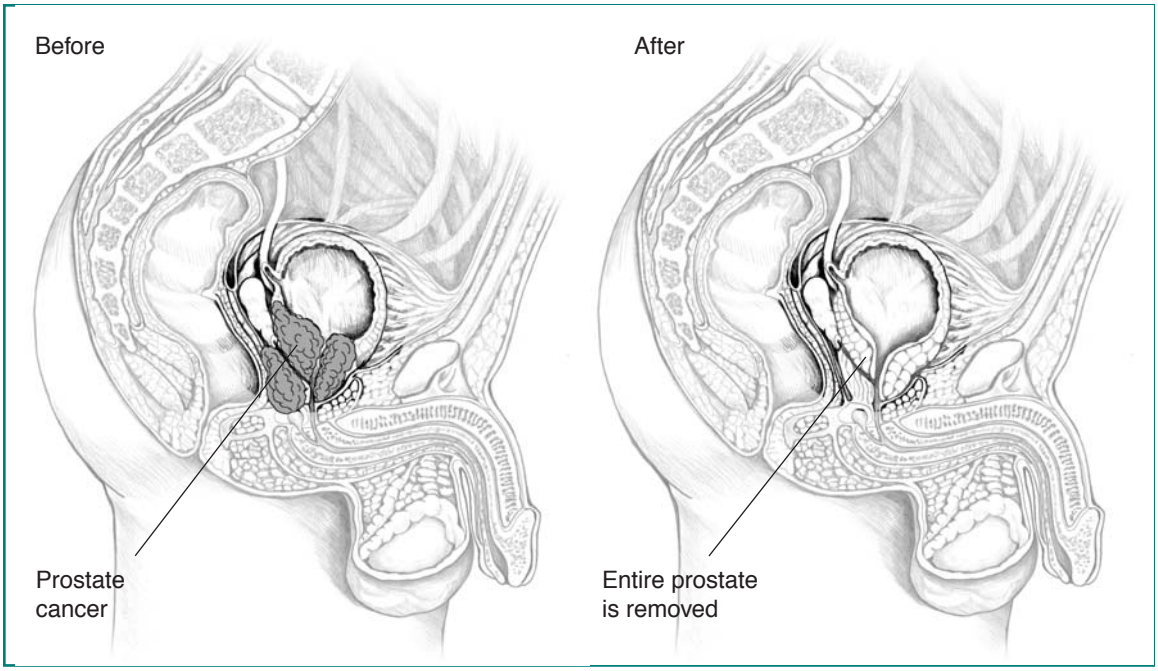
Any disease, condition, or injury that damages nerves can lead to urination problems. Nerve problems can occur at any age.

- Men who have had diabetes for many years may develop nerve damage that affects their bladder control as well as their sexual function.
- Stroke, Parkinson's disease, and multiple sclerosis all affect the brain and nervous system, so they can also cause incontinence.
- Overactive bladder is a condition in which the bladder squeezes at the wrong time. The condition may be caused by nerve problems, or it may occur without any clear cause. A person with overactive bladder may have any two or all three of the following symptoms:
  - *urinary frequency*—urination eight or more times a day or two or more times at night
  - *urinary urgency*—the sudden, strong need to urinate immediately
  - *urge incontinence*—urine leakage that follows a sudden, strong urge
- Spinal cord injury can cause incontinence by interrupting the nerve signals required for bladder control.
- In neural birth defects such as spina bifida or myelomeningocele, the backbone and spinal canal do not close before birth. In severe cases, nerve damage can result in many problems, including lack of control over urination.

Prostate Problems

The prostate is a male gland about the size and shape of a walnut. It surrounds the urethra just below the bladder, where it adds fluid to semen before ejaculation.

- **BPH:** The prostate gland commonly becomes enlarged as a man ages. This condition is called benign prostatic hyperplasia (BPH) or benign prostatic hypertrophy. As the prostate enlarges, it may squeeze the urethra. The bladder wall thickens and becomes irritable, and the bladder begins to contract even when it contains only small amounts of urine. This results in more frequent urination. BPH rarely causes symptoms before age 40, but more than half of men in their sixties and up to 90 percent in their seventies and eighties have some symptoms of BPH. The symptoms vary, but the most common ones involve changes or problems with urination, such as a hesitant, interrupted, weak stream; urgency and leaking or dribbling; more frequent urination, especially at night; and urge incontinence. Problems with urination do not necessarily signal blockage caused by an enlarged prostate. Other changes associated with aging can cause urination problems experienced by both men and women.
- **Radical prostatectomy:** The surgical removal of the entire prostate gland—called radical prostatectomy—may be recommended to treat prostate cancer. The surgeon may approach the prostate through the abdomen or through the perineal area (between the scrotum and the anus). The surgery may lead to erection problems and UI, although nerve-sparing procedures in the abdominal approach may make these side effects less likely.



Radical prostatectomy

Prostate Symptom Scores

If your prostate could be involved in your incontinence, you may be asked a series of standardized questions, either the International Prostate Symptom Score or the American Urological Association (AUA) Symptom Scale. Some of the questions you will be asked for the AUA Symptom Scale will be the following:

- Over the past month or so, how often have you had to urinate again in less than 2 hours?
- Over the past month or so, from the time you went to bed at night until the time you got up in the morning, how many times did you typically get up to urinate?
- Over the past month or so, how often have you had a sensation of not emptying your bladder completely after you finished urinating?
- Over the past month or so, how often have you had a weak urinary stream?
- Over the past month or so, how often have you had to push or strain to begin urinating?

Your answers to these questions may help identify the problem or determine which tests are needed. Your symptom score evaluation can be used as a baseline to see how effective later treatments are at relieving those symptoms.

- **External beam radiation:** This therapy uses an x-ray machine to deliver radiation to the prostate gland. The treatment is not painful but can cause loss of bladder control as well as fatigue, skin redness and irritation, rectal burning or injury, diarrhea, inflammation of the bladder wall (cystitis), blood in the urine, loss of sexual function, and loss of appetite.

How is UI diagnosed?

Medical History

The first step in solving a urinary problem is talking to your health care provider. Your general medical history, including any major illnesses or surgeries, and details about your continence problem and when it started will help your doctor determine the cause. You should talk about how much fluid you drink a day and whether you use alcohol or caffeine. You should also talk about the medicines you take, both prescription and nonprescription, because they might be part of the problem.

Voiding Diary

You may be asked to keep a voiding diary, which is a record of fluid intake and trips to the bathroom, plus any episodes of leakage. Studying the diary will give your health care provider a better idea of your problem and help direct additional tests.

Physical Examination

A physical exam will check for prostate enlargement or nerve damage. In a digital rectal exam, the doctor inserts a gloved finger into the rectum and feels the part of the prostate next to it. This exam gives the doctor a general idea of the size and condition of the gland. To check for nerve damage, the doctor may ask about tingling sensations or feelings of numbness and may check for changes in sensation, muscle tone, and reflexes.

EEG and EMG

An electroencephalogram (EEG), a test where wires are taped to the forehead, can sense dysfunction in the brain. An electromyogram (EMG) measures nerve activity in muscles and muscular activity that may be related to loss of bladder control.

Ultrasound

For an ultrasound, or sonography, a technician holds a device, called a transducer, that sends harmless sound waves into the body and catches them as they bounce back off the organs inside to create a picture on a monitor. In abdominal ultrasound, the technician slides the transducer over the surface of your abdomen for images of the bladder and kidneys. In transrectal ultrasound, the technician uses a wand inserted in the rectum for images of the prostate. Depending on your symptoms, your doctor may recommend one of these tests.

Urodynamics

Urodynamic testing focuses on the bladder's ability to store urine and empty steadily and completely, and on your sphincter control mechanism. It can also show whether the bladder is having abnormal contractions that cause leakage. The testing involves measuring pressure in the bladder as it is filled with fluid through a small catheter. This test can help identify limited bladder capacity, bladder overactivity or underactivity, weak sphincter muscles, or urinary obstruction. If the test is performed with EMG surface pads, it can also detect abnormal nerve signals and uncontrolled bladder contractions.

How is UI treated?

No single treatment works for everyone. Your treatment will depend on the type and severity of your problem, your lifestyle, and your preferences, starting with the simpler treatment options. Many men regain urinary control by changing a few habits and doing exercises to strengthen the muscles that hold urine in the bladder. If these behavioral treatments do not work, you may choose to try medicines or a continence device—either an artificial sphincter or a catheter. Finally, for some men, surgery is the best choice.

Behavioral Treatments

For some men, avoiding incontinence is as simple as limiting fluids at certain times of the day or planning regular trips to the bathroom—a therapy called timed voiding or bladder training. As you gain control, you can extend the time between trips. Bladder training also includes Kegel exercises to strengthen the pelvic muscles, which help hold urine in the bladder. Extensive studies have not yet shown that Kegel exercises are effective in reducing incontinence in men, but many clinicians find them to be an important element in therapy for men.

Some people with nerve damage cannot tell whether they are doing Kegel exercises correctly or not. If you are not sure, you may still be able to learn proper Kegel exercises by doing special training with biofeedback, electrical stimulation, or both. Biofeedback uses sensors to detect muscle activity and create a visual or audio signal when the appropriate muscles are being used. A small probe, about the size of a pen, is inserted in the anus to record muscle contractions during the exercises. If you squeeze the right muscle, you will see a change on a television screen or hear a tone from a speaker.

Mild electrical pulses delivered to the pelvic muscles cause them to contract and grow stronger. This technique can also help you locate the right muscles to use during Kegel exercises.

How do you do Kegel exercises?

The first step is to find the right muscles. Imagine that you are trying to stop yourself from passing gas. Squeeze the muscles you would use. If you sense a "pulling" feeling, those are the right muscles for pelvic exercises.

It is important not to squeeze other muscles at the same time and not to hold your breath. Also, be careful not to tighten your stomach, leg, or buttock muscles. Squeezing the wrong muscles can put more pressure on your bladder control muscles. Squeeze just the pelvic muscles.

Repeat, but do not overdo it. Pull in the pelvic muscles and hold for a count of 3. Then relax for a count of 3. Work up to 3 sets of 10 repeats. Start doing your pelvic muscle exercises lying down. This is the easiest because the muscles then do not need to work against gravity. When your muscles get stronger, do your exercises sitting or standing. Working against gravity is like adding more weight.

Be patient. Do not give up. It takes just 5 minutes, three times a day. Your bladder control may not improve for 3 to 6 weeks, although most people notice an improvement after a few weeks.

Medications

Medicines can affect bladder control in different ways. Some medicines help prevent incontinence by blocking abnormal nerve signals that make the bladder contract at the wrong time, while others slow the production of urine. Still others relax the bladder or shrink the prostate. Before prescribing a medicine to treat incontinence, your doctor may consider changing a prescription you already take. For example, diuretics are often prescribed to treat high blood pressure because they reduce fluid in the body by increasing urine production. Some men may find that switching from a diuretic to another kind of blood pressure medicine takes care of their incontinence.

If changing medicines is not an option, your doctor may choose from the following types of drugs for incontinence:

- **Alpha-blockers:** Terazosin (Hytrin), doxazosin (Cardura), tamsulosin (Flomax), and alfuzosin (Uroxatral) are used to treat problems caused by prostate enlargement and bladder outlet obstruction. They act by relaxing the smooth muscle of the prostate and bladder neck, allowing normal urine flow and preventing abnormal bladder contractions that can lead to urge incontinence.

- **5-alpha reductase inhibitors:** Finasteride (Proscar) and dutasteride (Avodart) work by inhibiting the production of the male hormone DHT, which is thought to be responsible for prostate enlargement. These 5-alpha reductase inhibitors relieve voiding problems by shrinking an enlarged prostate.

  The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) sponsored the Medical Therapy of Prostate Symptoms (MTOPS) trial, a multicenter study that found that doxazosin and finasteride taken together reduced the risk of BPH progression by 67 percent compared with placebo. The risk of progression was reduced by 39 percent with doxazosin alone and by 34 percent with finasteride alone.

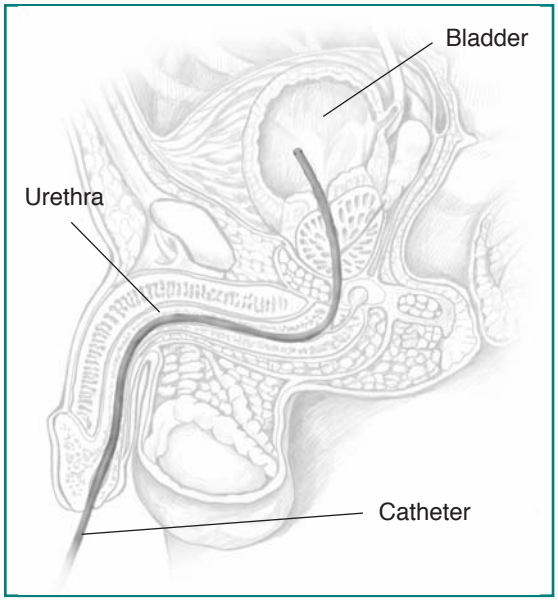
- **Imipramine:** Marketed as Tofranil, this drug belongs to a class of drugs called tricyclic antidepressants. It relaxes muscles and blocks nerve signals that might cause bladder spasms. Imipramine is also used to treat bedwetting in children.

- **Antispasmodics:** Propantheline (Pro-Banthine), tolterodine (Detrol LA), and oxybutynin (Ditropan XL) belong to a class of drugs that work by relaxing the bladder muscle and relieving spasms. Their most common side effect is dry mouth, although larger doses may cause blurred vision, constipation, a faster heartbeat, headache, and flushing.

Catheters

If all other methods fail or are found unacceptable, you may consider controlling incontinence by using a catheter, a thin tube inserted through the urethra to drain the bladder. Catheters must be managed with great care to avoid infection and stone formation.

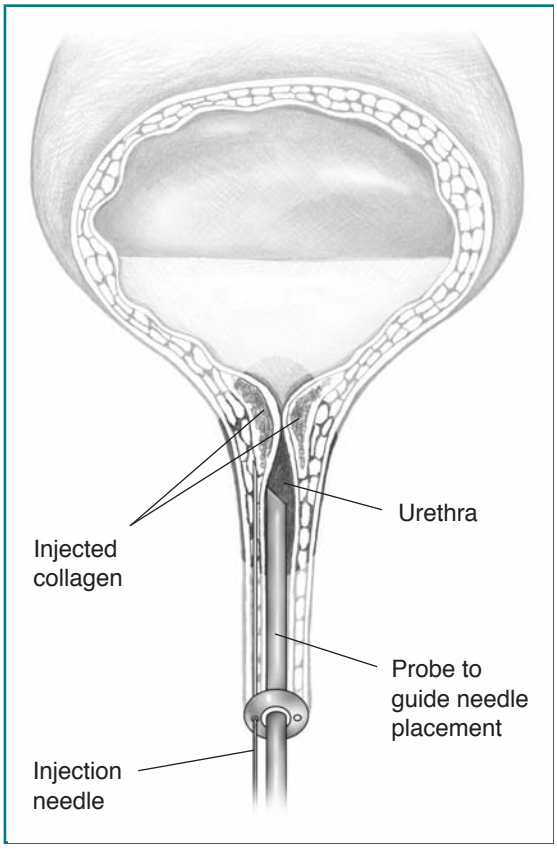
- **Clean intermittent catheterization:** If you have problems emptying your bladder because of an enlarged prostate or because of nerve damage, you may use a catheter at regular times, or as needed, to drain urine and prevent overflow incontinence. Depending on your situation, the catheterization may be done for you, or you may learn to do it yourself. You will need to learn sterile technique to avoid urinary tract infections.
- **Condom catheter:** Some men may prefer a drainage system that fits over the penis like a condom. You must take the same care to avoid infection as you do with other catheters. Condom catheters can also carry a risk of skin breakdown.



Clean intermittent catheterization

Urethral Injections

Another method to help keep the urethra closed is to inject a fat-like substance into the area that surrounds the opening of the bladder into the urethra. A variety of bulking agents are available for injection. Your doctor will discuss which one may be best for you. Collagen, for example, is a natural tissue from cows. After using local anesthesia or sedation, a doctor can inject the material in about half an hour. Over time, the body slowly eliminates the collagen, so you may need repeat injections. Before you receive collagen, a doctor will perform a skin test to determine whether you could have an allergic reaction to the material.

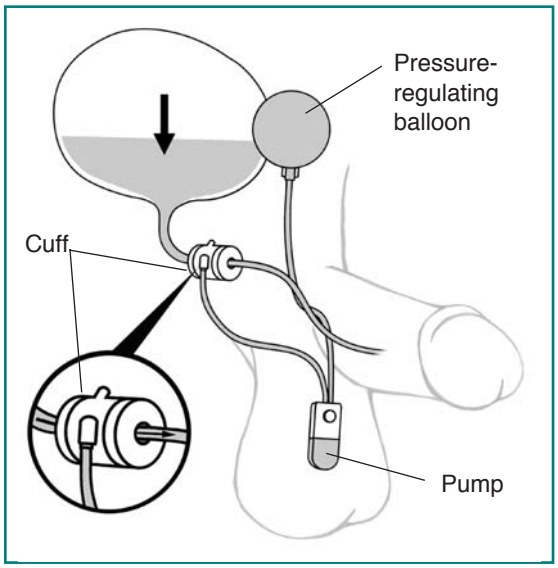


Urethral injections. Adding bulk to the tissue around the bladder opening helps keep the urethra closed.

Artificial Sphincter

Some men may eliminate urine leakage with an artificial sphincter, an implanted device that keeps the urethra closed until you are ready to urinate. This device can help people who have incontinence because of weak sphincter muscles or because of nerve damage that interferes with sphincter muscle function. It does not solve incontinence caused by uncontrolled bladder contractions.

Surgery to place the artificial sphincter requires general or spinal anesthesia. The device has three parts: a cuff that fits around the urethra, a small balloon reservoir placed in the abdomen, and a pump placed in the scrotum. The cuff is filled with liquid that makes it fit tightly around the urethra to prevent urine from leaking. When it is time to urinate, you squeeze the pump with your fingers to deflate the cuff so that the liquid moves to the balloon reservoir and urine can flow through the urethra. When your bladder is empty, the cuff automatically refills in the next 2 to 5 minutes to keep the urethra tightly closed.



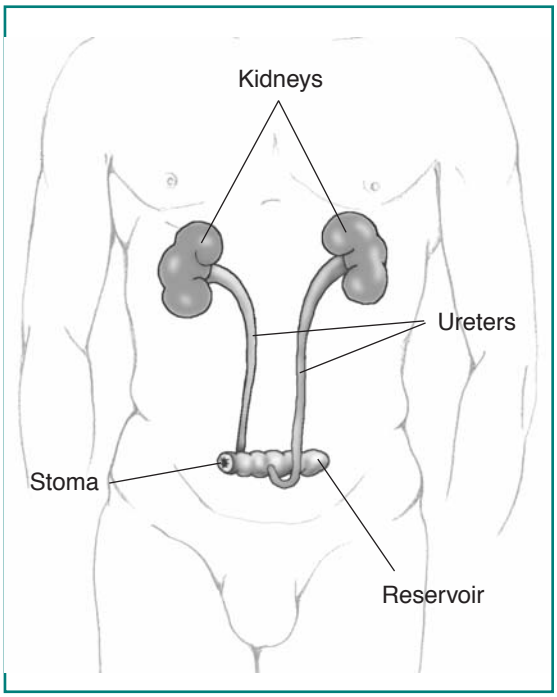
Artificial sphincter

Male Sling

Surgery can improve some types of urinary incontinence in men. In a sling procedure, the surgeon creates a support for the urethra by wrapping a strip of material around the urethra and attaching the ends of the strip to the pelvic bone. The sling keeps constant pressure on the urethra so that it does not open until the patient consciously releases the urine.

Urinary Diversion

If the bladder must be removed or all bladder function is lost because of nerve damage, you may consider surgery to create a urinary diversion. In this procedure, the surgeon creates a reservoir by removing a piece of the small intestine and directing the ureters to the reservoir. The surgeon also creates a stoma, an opening on the lower abdomen where the urine can be drained through a catheter or into a bag.



Urinary diversion

Social Support

UI should not cause embarrassment. It is a medical problem like arthritis or diabetes. Your health care provider can help you find a solution. You may also find it helpful to join a support group. In many areas, men dealing with the aftereffects of prostate cancer treatment have organized support groups. Other organizations to help people with incontinence exist as well. See "For More Information" at the end of this fact sheet.

Hope Through Research

NIDDK has many research programs aimed at finding treatments for urinary disorders, including UI in men. In addition to the MTOPS trial, which focused on drug therapies to treat BPH, the NIDDK is forming a consortium of seven collaborative Prostate Evaluation Treatment Centers and a Biostatistical Coordinating Center to develop and conduct randomized, controlled clinical trials of new surgical treatments to achieve the same long-term outcomes as traditional transurethral resection of the prostate (TURP) but with less morbidity, lower costs, a shorter hospital stay, and more rapid recovery. The first trial will evaluate the safety and effectiveness of transurethral needle ablation (TUNA), transurethral microwave therapy (TUMT), and medical therapy with an alpha-blocker and finasteride combined. The results of this first trial will provide the knowledge needed by both physicians and patients to make the most appropriate choices for long-term management of BPH.

For More Information

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The National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health under the U.S. Department of Health and Human Services. Established in 1987, the clearinghouse provides information about diseases of the kidneys and urologic system to people with kidney and urologic disorders and to their families, health care professionals, and the public. NKUDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about kidney and urologic diseases.

Publications produced by the clearinghouse are carefully reviewed by both NIDDK scientists and outside experts. This fact sheet was reviewed by Edward J. McGuire, M.D., University of Michigan Medical Center; and Philippe E. Zimmern, M.D., the University of Texas Southwestern Medical Center at Dallas.

This fact sheet is also available at *www.urologic.niddk.nih.gov.*

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